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Biotechnology Notes

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***Biotechnology Notes**, a compilation of agency activities, news events, and upcoming meetings, is prepared for members of the U.S. Department of Agriculture's (USDA) Committee on Biotechnology in Agriculture (CBA) by USDA's Office of Agricultural Biotechnology (OAB).*

INSIDE USDA

THE LOW-DOWN ON BST

News items concerning bovine somatotropin (BST) seem to appear daily in the press and on radio and TV. If the very thought of reading another article makes your eyes glaze over, maybe now is the time to recap a few of the basics. Most of the following information was gleaned from 11 "fact sheets" prepared by land grant universities, the Extension Service, the Agricultural Research Service (ARS), and industry groups. To receive the complete package, call the National Dairy Herd Improvement Association at 614-890-3630.

Scientists have suspected for 50 years that BST may increase milk production in dairy cows. In 1980, researchers at Cornell University began using a synthetically produced BST, developed through biotechnology, to study the relationship between BST and milk production. Their investigations and those of other researchers confirmed that BST does increase average milk production per cow by 15 to 40 percent.

The most recent studies show that treated cows are as healthy as untreated cows. The Food and Drug Administration has not yet approved BST, but results from clinical trials show dairy products from these cows are judged to be safe for sale.

Although more milk is produced per cow, the percentage of fat, protein, minerals, sugar, and BST in the milk are not changed. Pasteurization destroys BST and, after heat treatment, BST is also inactive in cattle.

BST is a protein and is digested before it can be absorbed. It has no effect on humans who consume milk because it is inactive in humans. Even if directly injected into the body, BST does not have a hormonal effect in humans.

USDA REVIEWS REPORT ON FOOD SAFETY

The International Food Biotechnology Council asked the Office of Agricultural Biotechnology (OAB) to submit comments on a draft report entitled "Biotechnologies and Food: Assuring the Safety of Foods Produced by Genetic Modification." OAB solicited comments from four USDA agencies on chapters concerning the scientific, safety, and regulatory aspects of genetically modified foods. When completed in early 1990, the report will propose criteria for evaluating the safety of food products derived through biotechnology.

NOBEL LAUREATES ADDRESS CONGRESSIONAL MEMBERS

On September 28, Paul Berg and James Watson, both Nobel Prize winners, addressed members of Congress and congressional staff on emerging issues in biotechnology. Their presentations were sponsored by the Congressional Clearinghouse on the Future, which provides Members and their staffs a broad variety of services that address emerging policy challenges. Watson discussed the importance of biotechnology, especially as it relates to the human genome mapping project at the National Institutes of Health (NIH). Berg outlined three issues he said should be resolved: the patenting backlog; the lack of interest of young people in pursuing careers in science; and the rate of scientific illiteracy in this country.

OAB BRIEFS SWEDISH VISITORS

Daniel Jones, OAB Deputy Director, and Harry C. Mussman, Deputy Assistant Secretary for Science and Education, met with Mats Hellstrom, Swedish Minister of Agriculture, Anders Klum, Executive Assistant, and Laila Edholm, Press Secretary, September 15. The visitors were mainly interested in learning about the public information aspects of biotechnology and USDA's perspective on the use of hormones in beef. David MacKenzie, Director of the National Biological Impact Assessment Program, gave an overview of the Program and the new electronic bulletin board that collects data on field research in biotechnology.

CBA TO BE RECHARTERED

The Committee on Biotechnology in Agriculture (CBA), a consortium of six agency administrators and two assistant secretaries, met September 25 and agreed to renew its charter for another 2 years. First formed in 1986, the CBA provides advice on biotechnology initiatives, proposals, and policies; assists in coordinating these activities; identifies gaps in basic science; fosters public awareness of the scientific issues; and reviews scientific issues submitted by USDA agencies.

The CBA is co-chaired by the Assistant Secretary for Science and Education and the Assistant Secretary for Marketing and Inspection Services. Alvin Young, OAB Director, serves as Executive Secretary. Member agencies include the Animal and Plant Health Inspection Service (APHIS), the ARS, the Cooperative State Research Service, the Economic Research Service (ERS), the Forest Service, and the Food Safety and Inspection Service.

In addition to renewing its charter, members discussed preparation of an environmental impact statement for the forthcoming USDA research guidelines, the new report on field tests prepared by the National Research Council, the Organization for Economic Cooperation and Development's (OECD) good developmental practices; and a proposal to create a biotech council that would report to the CBA.

SOON TO BE RELEASED

An agricultural information bulletin, "Consumer Effects of Biotechnology," by John Reilly, ERS Deputy Director, Resources and Technology Division, will be off-press later this month. Reilly discusses trends in private investment in biotechnology

and possible economic effects. The bulletin estimates that in 1988, 41% of private research firms' biotechnology development activities were in the livestock area; 36% were in crops; and 23% were in food processing. The author argues that the economic and consumer effects of biotechnology will be felt gradually, and the use of biotech techniques will be essential to maintain the rates of productivity gained in the past.

The bulletin is part of a new series, Technology*Agriculture*Resources, established by ERS. The series will highlight research conducted within the agency aimed at improving the understanding of tradeoffs that new agricultural technologies present for the environment, resource use, consumer health and safety, and for agricultural producers. Other bulletins in the series will focus on animal growth hormones, irrigation technology, and technology and land values. To order a copy of "Consumer Effects of Biotechnology," call 1-800-999-6779.

INTERNATIONAL AFFAIRS SPECIALIST JOINS OAB

Martha Steinbock, an international affairs specialist with the Office of International Cooperation and Development, begins a 1-year detail to OAB starting October 1. Steinbock will represent OAB at interagency meetings on international biotechnology issues, advise the scientific community on international cooperation in agricultural biotechnology and serve as a focal point for information gathering and dissemination on foreign initiatives on ag biotechnology.

OECD MEETS IN PARIS

Environment and biotechnology are the two themes to be explored at the Sixth Working Conference of Directors of Agricultural Research at the October 9-13 meeting of the OECD in Paris, France. John Lee, ERS Administrator and John Reilly will be part of the U.S. delegation. Dean Plowman, ARS Administrator and head of the delegation, will present one of the two lead papers, "Biotechnology and Agricultural Research," authored by Plowman and Reilly.

NEWS AROUND THE COUNTRY (AND THE WORLD)

HONESTLY SPEAKING . . .

Scientific fraud and conflict-of-interest were the topics of discussion September 19 at a meeting of the Interagency Biotechnology Discussion Group, chaired by Michael Marron, Office of Naval Research. Guest speaker Janet Newburgh of the NIH's Institutional Liaison Office spoke about new policies and offices that have been set up at NIH to address these issues.

INTERNATIONAL DATABASE UP AND RUNNING

A new international data base from Ireland is now on-line, according to the September issue of "Irish Biotech News." The service can access 15 international computer-

based information systems. One menu item focuses on biotechnology projects underway in European universities and research institutes. To learn more about the service, write to Seamus Bree, BioResearch Ireland, EOLAS, Glasnevin, Dublin 9; or call 353-1-370177. The FAX number is 353-1-370176. Also, see the September issue of Biotechnology Notes for information about a similar system initiated at USDA.

ANIMAL PATENTS NOT ALLOWED IN EUROPE

The European Patent Office has decided it cannot grant patents on animals, according to an article in the July 7 issue of Science. The decision stems from an application submitted by Harvard University to patent a transgenic mouse. The so-called "Harvard mouse" received a U.S. patent last year. The application was denied because under terms of the European Patent Convention, patents on plant and animal varieties are prohibited. Harvard is expected to appeal the decision.

WISCONSIN NEWSLETTER ON THE DRAWING BOARDS

Increased funding in the most recent Wisconsin state budget for technology transfer and economic development work is leading to increased efforts by the University of Wisconsin Biotechnology Center (UWBC). Staffing of the BioTechnology Transfer Office at UWBC has increased, and an industry/academia/government biotechnology newsletter is planned. Technology transfer director Margaret van Boldrik says the newsletter will be edited by Ken Smith, who has joined the staff. Smith edited the privately funded newsletter Wisconsin BioIssues, which ceased publication last May. Anyone interested in receiving free sample issues should write to UWBC, 1710 University Ave., Madison, Wisc. 53705; or call 608-262-8606.

NASDA CALLS FOR COUNCIL ON FOOD SAFETY

Members of the The National State Departments of Agriculture (NASDA) have called for the establishment of a National Council on Food Safety to ensure continued consumer confidence in the nation's food supply. Meeting in Atlantic City, N.J. in early September, NASDA commissioners, directors and secretaries from state departments of agriculture said, "The Council should be comprised of representatives of the USDA, the FDA, the Environmental Protection Agency (EPA) and NASDA." To learn more about NASDA or its recommendations, call S. Mason Carbaugh at 804-786-3501.

NEW SHIPPING GUIDELINES PROPOSED

Current guidelines for shipping rDNA molecules suggests that all such molecules be shipped as disease-causing agents. Since many rDNA molecules do not cause disease, a subcommittee of the NIH Recombinant DNA Advisory Committee has recommended that the language be changed. New definitions would reflect both USDA's and the Public Health Service's current regulations. The proposal will be submitted at the October 6 meeting at NIH. (See "Upcoming Meetings" for details.) For more information on the proposal, call Alan Goldhammer at 202-857-0237.

IN CASE YOU WEREN'T THERE

● On September 14, speaking for USDA before the U.S. congressional subcommittee on courts, intellectual property, and the administration of justice, OAB Deputy Director Daniel Jones discussed H.R. 1556, the "Transgenic Animal Patent Reform Act." The Act would allow farmers an exemption to reproducing patented transgenic farm animals. Jones said the Department does not support the Act because the exemptions would discourage invention and innovation in the agricultural biotechnology industry and hinder international competitiveness of American agriculture.

Speaking on behalf of the Industrial Biotechnology Association, Steven Holtzman, vice-president for corporate development at DNX, Inc., Princeton, N.J., said H.R. 1556 is premature because it may be 5 or 10 years before transgenic livestock are available to farmers. Also, Holtzman said a farmer's exemption means no patent protection for transgenic animals and could reduce investor interest in the technology while encouraging biotech companies to sell these animals only to large livestock corporations.

John Hoyt, president of the Humane Society of the United States, and testifying for the bill, said patenting of transgenic animals could increase the number of animals used for research and increase the potential for animal suffering. He said the Animal Welfare Act (AWA) will not protect transgenic animals because the animals used in most genetic engineering research -- rats, mice and farm animals -- are the ones that are exempt from the AWA. Hoyt called for a moratorium on issuance of further patents and the establishment of "interdisciplinary bioethics advisory boards" to guide the biotech industry and a Federal bioethics council to coordinate inter-agency biotechnology activities.

● The National Research Council, an agency of the National Academies of Sciences and Engineering held a press conference September 20 to announce publication of a new report, Field Testing Genetically Modified Organisms: Framework for Decisions. In its report, the 23-member committee recommended a new framework that regulators may use to determine which genetically modified organisms might pose significant risks during field testing. Robert Burris, emeritus professor of biochemistry at the University of Wisconsin, Madison, told media representatives the report also looks to the future of field testing and the use of unfamiliar organisms. For information about ordering a copy of the report, call Rick Borchelt or Gail Porter at 202-334-2138.

● "Patents and Regulations of Animal and Plant Biotechnology" was the topic of discussion at the September 21 meeting of Montgomery County, Md.'s Hi-Tech Council. Guest speaker Kevin O'Connor, U.S. Office of Technology Assessment, outlined the legal, ethical, and scientific issues that impact on patenting plants and animals. He also briefed the audience on H.R. 1556, the "Transgenic Animal Patent Reform Act."

● Transgenic fish, BST, and bT (Bacillus thuringiensis), were the topics at the fourth regional workshop of the Keystone Center, Sept. 25-27, at Falmouth, Mass. Michael Lidsky and Sally McCammon, members of the Biotechnology, Biologics, and Environmental Protection unit at USDA/APHIS, described the coordinated framework for regulating biotechnology products and the field test permit process. Representatives from industry, academia, the EPA, the U.S. Congress, the Consumers Union, the

Environmental Defense Fund, the Council of State Governments, and the North Carolina Department of Agriculture gave presentations on the scientific, regulatory, and socio-economic aspects of biotechnology.

- The development of public policy for biotechnology and the potential benefits of biotechnology as applied to insect pest management were the themes of a presentation given by OAB Director Alvin Young, September 26, at a forum sponsored by the University of Wisconsin in Madison. Other speakers at "Biotechnology, Insects and Society: In Perspective" included Fred Gould, a professor of entomology at North Carolina State University and a member of USDA's Agricultural Biotechnology Research Advisory Committee; Kenneth Barton, senior scientist, Agracetus; and Ralph W. F. Hardy, president, Boyce Thompson Institute for Plant Research at Cornell University.

Young emphasized biotechnology is a "tool" that complements the traditional tools entomologists use in their research endeavors. As such, biotech has "the potential to offer new ways of addressing the problems of insect pests in agriculture and forestry."

University officials hosted a tour of the biotechnology center, which has facilities for 280 faculty members in 52 departments. To learn more about the University of Wisconsin Biotechnology Center, call 608-262-8606.

NEW PUBLICATIONS

- Guidelines for the Use and Safety of Genetic Engineering Techniques or Recombinant DNA Technology. Prepared by the Inter-American Institute for Cooperation on Agriculture (IICA) and the Pan American Health Organization, with support from the Organization of American States and the Inter-American Development Bank. For information on ordering a copy, either write to the IICA, General Directorate, P.O. Box 55-2200, Coronado, Costa Rica; or call 29-0222. The telex number is 2144 IICA.

- See the latest issue of The Policy Studies Journal, volume 17, no. 1, for a number of articles related to biotech issues. Several were authored by the ERS staff, including "The Demand for Food Safety: An Historical Perspective on Recombinant DNA-Derived Animal Growth Hormones," by Fred Kuchler, John McClelland, and Susan Offutt; and "Forces Shaping the Agricultural Biotechnology Industry: Patents, Insurance, Regulation, and Financing," by Beverly Fleisher. Offutt is at the Office of Management and Budget and Fleisher is at the National Science Foundation. Both were at ERS when the articles were written.

- "Biotechnology: Backlog of Patent Applications." Prepared by the U.S. General Accounting Office. To receive a free copy, call 202-275-6241.

- Field Testing Genetically Modified Organisms: Framework for Decisions, prepared by a committee of the National Research Council's Board on Biology and supported by the members of the Biotechnology Sciences Coordinating Committee. National Academy Press. September 1989. To order a copy, call 202-334-3313.

- "Of the Earth: Agriculture and the New Biology" and "Delicate Balance: Understanding Human Health Through Biotechnology" are two videos available on loan, free-

of-charge, from the Industrial Biotechnology Association. Call Terri Higdon at 202-857-0244 for details.

- Alternative Agriculture, prepared by a committee of the National Research Council. National Academy Press. 1989. To order a copy, call 202-334-3313.

- "Public Concerns Regarding Applications of Biotechnologies," by Waldemar Klassen, USDA/ARS. Journal article reprinted from the Proceedings of the Second Annual Meeting of the Pan American Biodeterioration Society held at George Washington University, Washington, D.C., July 28, 1988. In Biodeterioration Research 2, Vol. 2, pp. 7-17, Plenum Press, New York, 1989. Reprints available, at no charge, by calling 301-344-3252.

- A supplement to the Agricultural Inventions Catalog is ready for distribution. To receive the supplement, the catalog, or both, call 301-344-2786.

UPCOMING MEETINGS

Oct. 2-4: Biotech USA. San Francisco, Calif. Sponsored by Bio/Technology. Call 800-243-3238, ext. 232.

Oct. 6: Meeting of the NIH Recombinant DNA Advisory Committee. The meeting takes place in Building 31, Conference Room 6, at NIH, 9000 Rockville Pike, Bethesda, Md. 20892. For more information, call 301-496-9838.

Oct. 10-12: Second International Symposium on Biotechnology and Food Safety. College Park, Md. Call 301-454-6056.

Oct. 11: "National Policy Imperatives in Agricultural Biotechnology." Presented by OAB Director Alvin Young at the Eighth Biennial Symposium of the Association of Research Directors. Crystal City, Va. Call Govind Sharma at 205-851-5783 or 205-851-5781.

Oct. 11-13: The Eighth Annual Meeting of the Industrial Biotechnology Association. "Biotechnology's Focus in the 1990's." Washington, D.C. Call 202-857-0244.

Oct. 11-13: "FDA Requirements for Health Products Derived from Biotechnology." Somerset, N.J. Sponsored by the Center for Professional Advancement. Call 201-613-4500.

Oct. 14: "Commercializing University Research in Biotechnology" is the topic at a conference to be held at the Duke University Fuqua School of Business in Durham, N.C. It is sponsored by Ernst & Young, the Synertech Group Inc., the N.C. Biotechnology Center, and the Durham Chamber of Commerce's Venture Capital Task Force. Call Rick Wilkins at 919-493-8416.

Oct. 15-19: Workshop on Woody Plant Biotechnology. Sponsored by the International Union of Forestry Research Organizations and co-sponsored by the Somatic Cell Genetics Working Party of the NATO Advanced Research Workshop on Woody Plant Biotechnology. Call David Neale at 415-486-3688.

Oct. 16: "Transfer of Biotechnology to the Field" is the title of a symposium to be held at the Annual Meeting of the American Society of Agronomy, the Crop Science Society of America, and the Soil Science Society of America in Las Vegas, Nev. OAB Director Alvin Young will talk on "Agricultural Biotechnology -- Choices and Challenges." Other panelists will discuss the role of research stations in the development of new technologies, application of results from biotech field trials, and the identification and transfer of genes in crop plants. Call 406-755-4303 for details.

Oct. 16-19: Food and the Environment: A Crisis of Public Confidence. Conference sponsored by the Agriculture Council of America (ACA) and the ACA Education Foundation; co-sponsored by the National Center for Food and Agricultural Policy. Washington, D.C. Call 202-682-9200.

Oct. 16-20: Recombinant DNA Technology. Sponsored by the American Type Culture Collection. Rockville, Md. Call 301-231-5566.

Oct. 17-19: 'Biotechnica '89: The Fifth International Congress and Exhibition for Biotechnology. Hannover, West Germany. Write to Hannover Fairs USA, 103 Carnegie Center, Princeton, N.J. 08640.

Oct. 19: "The National Center for Biotechnology Information" is the topic of the next breakfast meeting of Montgomery County, Md's High-Tech Council Inc. Guest speaker is David Lipman, Director of the Center. Gaithersburg, Md. To make a reservation, call 301-762-6325.

Oct. 24-25: Public Health Service Policy on Humane Care and Use of Laboratory Animals, Ohio State University, Columbus, Ohio. Call 614-292-4230.

Oct. 28-Nov. 2: Annual meeting of the U.S. Animal Health Association. Las Vegas, Nev. The Association's Committee on Biotechnology will present about six scientific papers and Terry Medley, USDA/APHIS, will discuss biotech regulations. Call Ella Blanton at 804-266-3275.

Nov. 7-8: International Food Biotechnology Council Symposium. Crystal City, Va. Call Donette Dornburg at 202-659-0074.

Nov. 13-17: Biotechnology Risk Assessment Research Meeting. EPA Environmental Research Laboratory. Corvallis, Oregon. Call 503-757-4661.

Biotechnology Notes is written and edited by Marti Asner, a public affairs specialist in USDA's Office of Agricultural Biotechnology. Suggestions for items to include in future issues are always appreciated and may be sent to USDA/OAB, Room 321-A, Administration Bldg., 14th and Independence Ave., S.W., Washington, D.C. 20250; or call 202-447-9165. The FAX number is 202-447-6488.